

The background is a blue-tinted photograph of a train on tracks. In the foreground, there is a large, white, cylindrical electrical insulator or transformer component mounted on a metal structure. The train is visible in the background, moving along the tracks.

# Kallipr Kloud Fleet Solution

# IOT PLATFORMS – CHALLENGES AT SCALE

1

Customers demanding **reduced cost of deployment, increased longevity of device and battery, and more efficient operations.**

2

No centralised fleet monitoring to monitor **device health** and assist with **device triage activities at scale**, due to reliance on multiple actors across the IoT solution stack.

3

Strong emphasis on need for **monitoring of critical infrastructure** and renewed focus on **cybersecurity, privacy and security regulation compliance.**

# IOT PLATFORMS – CUSTOMER PAIN POINTS



## Device Fleet Health

I want the comfort of knowing my devices are functioning as required and be made aware of any issues before they occur.



## Device Registration & Bootstrapping

I want devices to arrive pre-configured and registered to my account so that they can be installed and activated out-of-the-box.



## Battery & Data Usage

I want to be able to understand the remaining battery life of my devices in days and weeks, while being able to understand the impact of configuration changes and firmware updates to my estimated battery life.



## Fleet Upgrades

I want firmware upgrades to be zero touch and automated like my iPhone, and validation of configuration commands to reduce manual handling and user errors.



## Plug & Play

I want to turn up to install site with a pre-built solution, install in the shortest required time, and know that the device is working and connecting correctly before I walk away.




## Security & Infrastructure

I want to know my devices and data is secure, remains onshore and can only be accessed by authorised members; whilst leveraging my existing cloud infrastructure so that my costs can scale aligned to my IoT fleet deployment.

# Kallipr Kloud Fleet Feature Comparison



While market device management solutions cater to basic device management needs, Kallipr Kloud goes further to maximise your device's potential and unlock advanced functionalities with our comprehensive solution.

		'Vanilla' Device Management	 FLEET. by Kallipr KLOUD
Device Bootstrap & Provisioning	Devices arrive pre-configured with default customer configuration and registered to customer's tenancy.	✗	✓
Configuration & Firmware Updates	Manual intervention for configuring and updating devices, requiring heavy human touch to manage rollouts.	✓	✓
	Configuration and firmware updates using template logic and error handling to reduce risk and increase automation.	✗	✓
Fleet Monitoring	Monitor the health of your fleet to anticipate device failures enabling timely maintenance notifications and interventions based on device, battery, cloud and connectivity health telemetry and events	✓	✓
Battery Management	Basic estimation of battery life through reported voltage and current measurement	✓	✓
	Detailed battery diagnostics and dynamic life estimates based on use case and environmental conditions.	✗	✓
Sensor Plug & Play	Facilitates straightforward sensor connections, simplifying initial setup and operation.	✓	✓
	Sensor connectivity with auto-configuration and profiles stored on device, ensuring true sensor plug & play.	✗	✓
Deployment Options	Easily incorporate Kallipr Kloud Fleet via our hybrid private cloud offer and maintain full access and data controls via you existing Azure services or select standard Public SaaS option.	✗	✓

## Connectivity Redefined Kallipr Kloud

Kallipr Kloud is our innovative cloud solution that seamlessly integrates with our IoT devices.

Features include real-time data monitoring, remote device management and enhanced security protocols.



	KLOUD   1.0 by kallipr.	KLOUD   2.0 by kallipr.
Data Delivery	CUMULOCITY IoT, Azure	CUMULOCITY IoT, Azure, aws
Device Management	CUMULOCITY IoT	Azure
SaaS	Public Only	Public, Private Hybrid
Protocols	MQTT(s)	MQTT(s), LwM2M, Ultralight
Connectivity	NB-IoT, LTE-M	NB-IoT, LTE-M, Bluetooth, LoRa
Hardware	Captis S1.0	Captis S1.0 & S2.0

Manage

Devices

Device groups

Admin

Accounts

Products

Firmware

# CAPTIS RECHARGE - 89610180003731050929

Edit Device

### Device Information



**Name**  
Sewer M1293

**Model**  
Captis Recharge

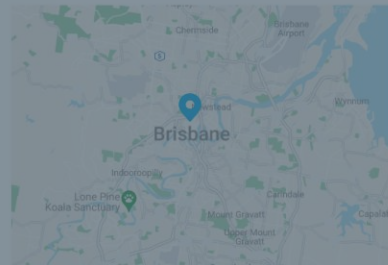
**Firmware**  
V1.31.2 Beta

**Module Firmware**  
M0128310.1231

**Last Updated**  
13:58, 2 Feb 2024

### Maps

Unit 1A, Building 2/61 Metroplex Ave



### Installation

Installed by John Peter on Wed, 24 Nov 2023



### Device Information

Battery health  
3.6V

Battery charge  
45%

Signal (RSRP)  
-55.4 dBm

Send success  
66%

Temperature  
24°C

Tamper switch  
Intact

### Ambient Temperature



### Rainfall



Date and Time	Value	Unit
23/06/2024, 21:15:43	48.4	°C
23/06/2024, 18:00:12	51.1	°C
23/06/2024, 12:00:34	50.7	°C
23/06/2024, 06:00:11	52.6	°C
23/06/2024, 00:22:09	50.7	°C
23/06/2024, 18:00:57	54.3	°C

Date and Time	Value	Unit
23/06/2024, 21:15:43	1104	mm
23/06/2024, 18:00:12	1291	mm
23/06/2024, 12:00:34	1212	mm

**KALLIPR KLOUD SERIES 2**  
Foundations for Automation

Threshold exceeded >1100mm Rainfall  
08/06/2024, 16:59:53, Captis 89610180003731050929

View Details

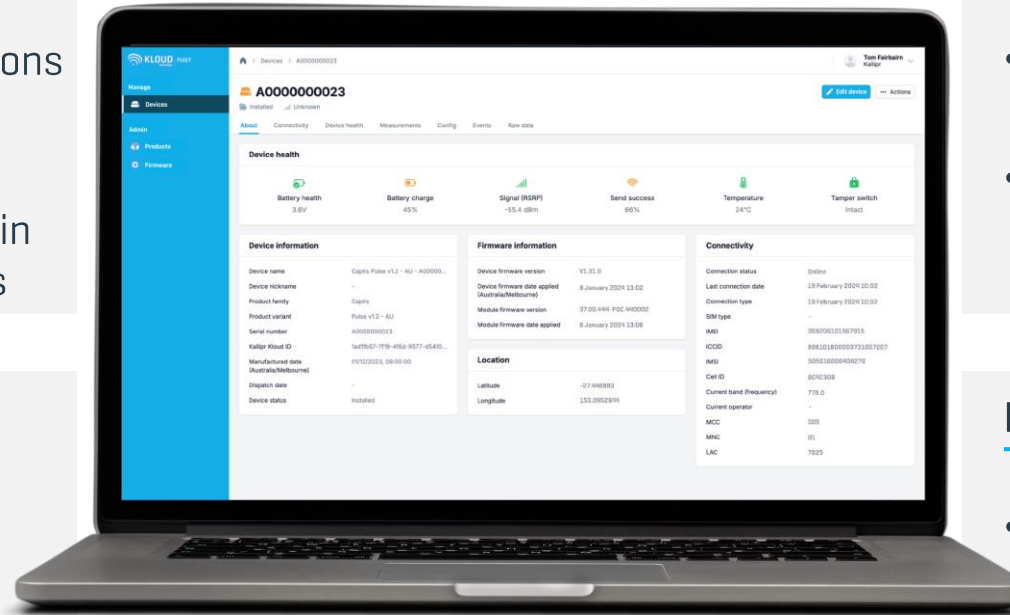
# Kallipr Kloud Fleet – Foundations for Automation

## Secure Data, Your Way

- Adaptable cloud architecture options for your security requirements, delivered to your endpoint
- Zero-trust architecture to maintain integrity on all device interactions

## Streamline Your Operations Centre

- Scale device management via automated commands
- Foolproof validation to safeguard scaled operations



## Maximize Asset Life, Reduce Costs

- Real-time battery life modelling to track and optimize maintenance
- Minimize field visits with RAG status alerts, identifying fleet risks in advance

## Lay Foundations For The Future

- Energy efficient operations by moving cloud compute to the Edge
- AI and Automation ready to optimise ROI of digital transformation

# KK Fleet Hybrid Private Cloud



# KALLIPR KLOUD FLEET –HYBRID PRIVATE CLOUD

Fleet SaaS, on Azure, for critical infrastructure, and aligned with Microsoft's Operational Technology [OT] strategy.

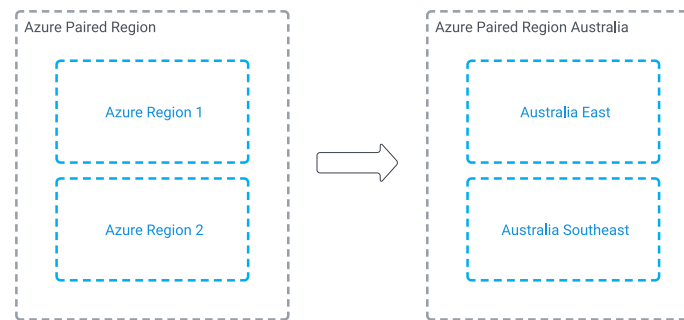
1

Focused on extreme edge and remote workloads via Azure and soon Azure IoT Operations and Azure Arc.



2

World class design using regional paired deployments, deployed side-by-side with tier 1 critical infrastructure organizations.



3

Integrator friendly solution enables reach into OT environments with support for Azure services such as Application Insights, Microsoft Defender for IoT and AI.



# KALLIPR KLOUD FLEET –HYBRID PRIVATE CLOUD

Providing a highly secure device management application with regional direct integration via the Azure back plane, ensuring customers can use their existing Azure infrastructure whilst maintaining access and data controls for their fleet whilst using Kallipr Kloud.

## Customer's Azure Cloud Ecosystem



### Public/Private APN

Captis connecting to Customer's IoT Hub via their own secure network.



### User Authentication

Azure Entra ID for SSO & Authentication to ensure access is only controlled by the Customer.



### IoT DPS

Secure device provisioning via IoT DPS utilising relevant authentication credentials and IDs.



### IoT Hub

Secure device communication via IoT Hub utilising relevant authentication credentials and IDs.



### Event Hub

Route Query controlled by Customer to pass events via Event Hub between Customer IoT Hub to Kallipr Kloud, i.e., only share Device Health data.



### Data Storage

Customer can utilise existing storage services for Device Telemetry data and pass to existing Analytics and Insights tools.



## Platform



### Core Platform

Dedicated containerised private endpoints within Kallipr Kloud Backend and Frontend.



### Azure Sentinel

SIEM solution options to monitor Kallipr Kloud environment.

## Additional Private Security Options



### Isolated Resources

Dedicated Customer resources including key vault, time series data and azure data lake.



### Dedicated Storage

Segregated Customer Database to store Customer's device health data.



### Kallipr Kloud Web Portal

Secure Customer regional access to Kallipr Kloud via App Gateway Portal & API over Azure private network i.e., not public internet.



### Ultralight Gateway

Ultralight (via QUIC) available on Captis Series S2 and Kallipr Kloud Connectivity Module option.